## Question 3

a) Plot below shows the discrete plot of impulse response (h[n]).



Result was confirmed with matlab as well, by looping over the impulse vector and finding the index where the first non-zero value occurs.

Frequency is 16000 Hz, so the delay = 149/16000 = 0.0093 seconds. Speed of sound = 340 m/s, so distance between microphone and the person is d = 340\*0.0093 = 3.1662 m.

b) Sound still audible after convolution, although there is some noise noticeable. SHOROUQ!! Can you listen to both and give a better description? Yes Taha

The sound after convolution contains background noise.